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Insatiable Thirst? The Fracking/Water Collision in South Texas

by **Peyton Fleming** — *National Geographic*

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KARNES CITY, TEXAS – Fifty miles south of San Antonio on Route 181, signs of the hydraulic fracturing boom taking place in the Eagle Ford Basin are everywhere. New hotels are popping up. Trucks endlessly barrel down roads. Restaurants can't find enough workers.

And then there are the potted country roads lined with artificial ponds, water stations and miles of above-ground pipelines. In every town, you hear about the region's unrelenting drought and aggressive measures 'frackers' are using to acquire critical freshwater for their wells. Hundreds of new wells are being drilled in this basin every month and each requires several million gallons of water.

"I was eating lunch one day and I look out the window and see one of these fracking trucks taking water from one of the town's fire hydrants," said Kathy Payne, 77, mayor of a small speck of a town Nordheim, shaking her head in disbelief. Her message to the trucker and the many industry representatives who have offered to buy the town's water is always the same. "I won't sell water unless it's for our citizens."

But she notes, "If I'd done otherwise, all of our roads would be paved."

Payne can expect more offers. Shale energy production is projected to double in this region in the next decade, which means the industry will need twice as much water.

The Eagle Ford Basin in south Texas is ground zero of the nation's prolific fracking growth and deepening questions of whether there is enough freshwater to sustain it.

Like many other shale energy basins in the U.S., including the Permian Basin in west Texas, the Eagle Ford play is marked by aridness, drought and strained groundwater aquifers that are serving multiple users, including irrigated farmland, fast growing populations and, now, a shale energy industry that is exploding as hydraulic fracturing opens up once-inaccessible oil and gas reserves to production.

From January 2011 through May 2013, hydraulic fracturing producers in the Eagle Ford used about 19 billion gallons of water for 4,300-plus wells, the highest water use of any shale basin in the country, according to a new Ceres report, *Hydraulic Fracturing and Water Stress: Water Demand by the Numbers*. Virtually all the water is coming from groundwater aquifers, many of them in small remote counties that are already facing serious depletion challenges. In Dimmitt, Zavala and La Salle Counties, for example, local aquifers have dropped 100 to 300 feet the past few decades, yet hundreds of fracking wells were put into production, using more than seven billion gallons of water.



Kathy Payne, mayor of Nordheim, Texas

The fracking boom is bringing vast amounts of money into Texas – an estimated \$50 billion will be invested this year in the Eagle Ford and Permian alone – much of it going to landowners who are leasing off their mineral rights, precious groundwater, or both. Larry Baxter, a landowner in Mertzon in the Permian Basin, installed two frack tanks on his land last year so he could sell water to the oil industry. By his own estimates, he expected to make up to \$36,000 a month filling up 20 to 30 water trucks for the oil industry each day. “I could sell 100 truckloads a day if I was open to it,” Baxter told the *Guardian* last summer.

This get-rich-quick zeal has a growing number of Texans feeling nervous. Local water regulators and environmentalists say the industry’s growth and unchecked groundwater withdrawals are not sustainable and predict that many groundwater sources will run dry if tougher water controls are not adopted.

“As the bank accounts rise, aquifers drop. That is precisely what is happening,” said Hugh Fitzsimons, a rancher and director of the Wintergarden Groundwater Conservation District, where roughly a third of total water use is for hydraulic fracturing.

“It’s been a huge economic boom, but most people were not aware of what they were getting into,” added Sister Elizabeth Riebschlaeger, a local environmental activist who drives hundred of miles every week in the Eagle Ford meeting with farmers, ranchers and other property owners who are concerned about their drinking water being contaminated or disappearing altogether.

But curbing the industry’s growing thirst will not be easy.

The biggest obstacle is the state’s generally weak groundwater regulations. “We have a dull knife right now, we need to sharpen it,” Fitzsimons said.

Local groundwater conservation districts have a key role in regulating water use, but practices vary widely across the state, with many having no water use restrictions on fracking at all.

The state’s archaic ‘rule of capture’ law is another impediment. Simply put, it allows property owners to pump as much groundwater to the surface as they wish, even if it is drawn from a common aquifer that extends under a neighbor’s land. This creates the problem of property owners racing to extract as much water as possible from a common resource.

The industry should be doing more, too, including devoting more resources to developing alternative water sources, such as recycled water or brackish water. Some progress is being made; brackish groundwater already accounts for an estimated 20 percent of water use in the Eagle Ford, for example. Still, none of these technologies alone will ever be able to solve the basin’s freshwater sourcing challenges.

Ultimately, all shale producers and service providers, especially key local players like Anadarko, Chesapeake, EOG and Halliburton, should be deploying a variety of tools to reduce their water footprints. Key among those tools are stronger disclosure about current and future water sourcing, closer collaboration with local communities and policymakers, and substantially improved on-the-ground water practices.

Failing to make progress on these fronts will almost certainly put the industry’s growth and the region’s limited freshwater supplies on a collision course, with negative consequences for everyone.

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[Read the post at National Geographic](https://www.ceres.org/press/blog-posts/insatiable-thirst-the-fracking-water-collision-in-south-texas)